



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/511,658

10/18/2004

Sherman S. Lin

0837RF-H544-US

6248

38441 7590 06/29/2007  
LAW OFFICES OF JAMES E. WALTON, PLLC  
1169 N. BURLESON BLVD.  
SUITE 107-328  
BURLESON, TX 76028

EXAMINER

THOMPSON, KENNETH L

ART UNIT

PAPER NUMBER

3672

MAIL DATE

DELIVERY MODE

06/29/2007

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

## Office Action Summary

Application No.

10/511,658

Applicant(s)

LIN ET AL.

Examiner

Kenneth Thompson

Art Unit

3672

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 02 April 2007.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1,2 and 4-19 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,2 and 4-13 is/are rejected.
- 7) ☒ Claim(s) 14-19 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- ☐ Notice of Informal Patent Application
- ☐ Other: \_\_\_\_\_

### **DETAILED ACTION**

The indicated allowability of cancelled claim 3 is withdrawn in view of the newly discovered reference(s) to Yamabayashi et al., EP 474,441. Rejections based on the newly cited reference(s) follow.

#### ***Specification***

The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required:

The end adapter being of a non-metallic material is not disclosed in the Specification.

#### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by Yamabayashi et al., EP 474,441.

Yamabayashi et al. discloses a fiber reinforced drive shaft (1) having a captured rubber end adapter (3; p2, lines 41-44).

#### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 2 and 4-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lee et al., US 6,336,986 in view of Yamabayashi et al., EP 474,441.

Regarding claim 1, Lee et al. discloses in figures 1-11 a drive shaft having an elongated composite material portion (110) having opposing ends; and at least one end adapter (114, 115; 112) disposed at one end of the composite material portion, the end adapter being captured into the composite material portion during the process of manufacturing. Lee does not disclose non-metallic end adapter. Yamabayashi et al. teaches use of rubber end adapter to improve balance and reduce the overall weight of the drive shaft (p. 2, lines 15-31). It would have been obvious to one having ordinary skill in the art at the time of the invention to replace a steel adapter disclosed by Lee with a rubber adapter as taught by Yamabayashi et al. to further lessen the weight of the drive shaft.

As to claim 2, Lee et al. discloses the end adapter is metallic (col. 4, lines 36-40).

As to claim 4, Lee et al. discloses the composite material portion is formed from a braided fiber and resin transfer molded composite (col. 1, lines 64-67).

As to claim 5, Lee et al. discloses the braided fiber is a two dimensional braided fiber.

As to claim 6, Lee et al. discloses the braided fiber is a three dimensional braided fiber.

As to claim 7, Lee et al. discloses the composite material portion is formed from a filament wound composite (col. 1, lines 64-67).

As to claim 8, Lee et al. discloses a component interface portion adapted for coupling to a driving or driven component; and an adapter-tube interface portion (121); wherein the adapter-tube interface portion is adapted to be captured into the composite material portion during the process of manufacturing.

As to claim 9, Lee et al. discloses means (121,116) for transferring torque from the end adapter to the composite material portion and vice versa.

As to claim 10, Lee et al. discloses a layer of adhesive disposed between the end adapter and the composite material portion (col. 4, lines 49-54).

As to claim 11, Lee et al. discloses a neck portion (between 121 and 114) disposed between the component interface portion and the adapter-tube interface portion (121), the neck portion having a reduced cross-sectional area.

As to claim 12, Lee et al. discloses at least one recessed circumferential groove (fig 11; between 111 and 125) around the adapter-tube interface portion.

As to claim 13, Lee et al. discloses at least one outwardly protruding lug (spline of 121) disposed at the adapter-tube interface portion.

***Allowable Subject Matter***

Claims 14-19 objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.


**Conclusion**

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kenneth Thompson whose telephone number is 571 272-7037. The examiner can normally be reached on 7:00 am - 4:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David J. Bagnell can be reached on 571-272-6999. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

21 June 2007

  
Kenneth Thompson  
Primary Examiner  
Art Unit 3672